

REMARKS

[0001] Claims 29, 31-37, 41, and 42 are pending. Claims 29 and 31-33 are rejected under 35 U.S.C. §103(a) as being unpatentable over Bach '739 (U.S. 5,781,739), Bach '660 (U.S. 6,141,660) and Francis (U.S. 6,665,861). Claims 34, 35, 41, and 42 are rejected as unpatentable over Bach '739, Bach '660, Francis, and Womble (U.S. 5,488,648). Claim 36 is rejected as unpatentable over Bach '739, Bach '660, Francis, and Dan (U.S. 6,560,639). Claim 37 is rejected as unpatentable over Bach '739, Bach '660, Francis, and Snover (2004/0230987).

AMENDMENTS TO CLAIMS

[0002] Applicants have amended Claim 29 to clarify that the automatic deployment is done without human intervention. Support for this amendment is found in the specification at paragraphs 81 – 84.

RESPONSE TO CLAIM REJECTIONS UNDER §103(a)

[0003] Claims 29, 31 – 37, and 41 – 42 stand rejected under different combinations of Bach '739, Bach '660, Francis, Dan, Snover, and Womble. Applicants respectfully submit that the present amendments overcome the art of record.

[0004] The Examiner bears the initial burden of establishing a *prima facie* case of obviousness. *See* MPEP § 2142. *Graham v. John Deere Co.*, 383 US 1, 148 USPQ 459 (1966) sets forth the factual inquiry necessary to determine obviousness. Briefly, the Examiner must: (1) determine the scope and content of the prior art; (2) determine the differences between the prior art and the claims at issue; and (3) resolve the level of ordinary skill in the art. Against this background, the obviousness or nonobviousness of the subject

matter is determined. In particular, the Examiner must provide a “clear articulation of the reason(s) why the claimed invention would have been obvious.” MPEP §2141[III].

[0005] The Office Action fails to establish a *prima facie* case of obviousness because not all elements of the amended claims are taught or suggested in the art of record and, second, because the factual inquiry of Graham weighs in favor of nonobviousness.

Scope and Content of the Prior Art

Bach '739

[0006] Bach '739 teaches a method and apparatus that enables a browser-based user to communicate with IMS-based applications. Col. 2, 49-51. This communication is provided using IMS Web. IMS Web Studio directs a web client through a series of steps to browse and download MFS source files that is used to produce an input HTML form and C++ classes to parse input strings in a CGI-BIN program created by IMS Web Studio. Col. 2, 62-66. The final output from IMS Web Studio consists of two files: the CGI-BIN program and the input HTML form, which the user **manually** installs on the web server to provide access to the IMS application. Col. 3, 9-12; Col. 14, 5-8.

Bach '660

[0007] Bach '660 teaches a method and apparatus for generating class specifications for an object-oriented application that accesses a hierarchical database such as IMS. Abstract. The class specification is generated using a command line interface of a class definition tool. Col. 5, 37-39. The resulting application program accesses the hierarchical database using an objects framework that models the database such that the program can access the database data using tools such as DL/I. Col. 5, 46-52.

Francis

[0008] Francis teaches an apparatus and method for generating semi-deployed enterprise java beans (EJB). The EJB designer specifies, in metadata in the un-deployed EJB deployment information for the creation of deployment classes in an EJB container. Col. 6, 24-30. Models of the EJB are persisted in XML form. Col. 6, 59-61.

[0009] Summaries of the teachings of the other references were provided in the previous Office Action. Given the focus of the present arguments on the independent claim, rejected under Bach '739, Bach '660, and Francis, Applicants have not repeated the summaries of the other prior art references. This is not a concession, however, that the prior art teaches or renders obvious the limitations of those claims not discussed here.

Differences Between the Prior Art and the Claims at Issue

[0010] Bach '739 does not teach automatically deploying without human intervention the generated XMI files and middleware application to one or more servers. The Examiner argues that Bach '739 teaches this limitation at Col. 14, lines 8 – 13, which states: “1. Places the CGI-BIN executable file in the directory which was user specified in IMS Web Studio (‘Web Server’s CGI Path’). This directory must be the same directory that their Web server uses to look for CGI-BIN scripts.” However, this is not automatic deployment. Rather, Bach '739 makes very clear that this deployment is done manually. Immediately preceding the quoted section reproduced above, Bach '739 specifies: “To incorporate the files that the user has created into their Web server environment, **the user performs the following steps.**” Bach '739, Col. 15, lines 5-8. The portion of Bach '739 cited by the Office Action is the first identified step.

[0011] Thus, clearly, Bach '739 does not teach automatic deployment without human intervention. To the contrary, Bach '739 explicitly teaches manual deployment that requires human intervention since it teaches that the user places the CGI-BIN executable file in the

directory. Nor do the other cited references teach automatic deployment of the generated XMI files and middleware applications.

[0012] Francis teaches that XMI was known to aid in mapping EJBs to data storage. This make sense, of course, since it explicitly notes that “XMI is a new standard from the Object Management Group (OMG) that combines the Unified Modeling Language (UML) with the Extensible Markup Language (XML) standard.” Francis, Col. 6, 62-65. Thus, XMI is particularly suited to the sort of mapping discussed in Francis. Francis does not, however, teach or otherwise indicate that XMI would be appropriate in the claimed MFS-IMS environment.

Level of Ordinary Skill in the Art

[0013] Several considerations are necessary to determine the level of one having ordinary skill in the art. “Factors that may be considered in determining the level of ordinary skill in the art include (1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) education level of active workers in the field.” Environmental Designs, Ltd. v. Union Oil Co., 713 F.2d 693, 696, 218 USPQ 865, 868 (Fed. Cir. 1983), cert. denied, 464 U.S. 1043 (1984); *see also*, MPEP § 2141.03.

[0014] Here, the art is software for automatically generating a web interface for an MFS-based IMS application. The education level of the inventors is at least a college degree. The types of problems include allowing access to legacy systems using current web-based technologies. The prior art required extensive GUI work and an operation-per-application approach to generating web access. The speed at which innovations are developed is typical of other areas of the software industry. The technology itself is of normal complexity and requires

workers with skill and familiarity with legacy systems and web interfaces. Finally, the education level of workers in the field is generally a college degree in the art.

Evidence Present in the Application Indicative of Obviousness or Non-obviousness

[0015] As noted above, Bach '739 actually teaches away from automatic deployment, specifically noting that the CGI-BIN program and the input HTML form must be manually installed by a user on the web server. This creates extra work for the user in addition to manually stepping through the GUI for each application.

[0016] In addition, none of the cited references teach the automatic deployment limitation. The Office Action has not provided an explanation of why this automatic deployment would be obvious, particularly where Bach '739, the primary reference, teaches manual deployment. Given that this limitation is not accounted for, Applicants respectfully note that the Office Action has failed to present a *prima facie* case of obviousness.

[0017] In addition, none of the references teach or suggest that XMI would be an appropriate choice in the context of the present invention. Francis shows only that XMI is appropriate for providing metadata for enterprise Java beans (EJB) with deployment information to aid in the deployment of EJBs. This is a different problem than the one presented in the present invention; while it may have been known to use XMI for the sorts of problems addressed by Francis, there is no evidence that one of skill in the art would have found it obvious to use XMI in approaching the problems that gave rise to the present application.

[0018] Applicants additionally note that, in the Office Action, it is asserted that Applicants have only attacked the references individually. The Office Action also argues that Bach '739 teaches the main novelty of the application and that the other references are only cited for their explicit teachings of the limitations identified. However, prior art references must be

considered in their entirety. MPEP §2141.02[VI]. Applicants respectfully submit that the arguments are not based on an attack of the references individually; rather, they are based on a treatment of the whole reference, which is the proper standard under §103. Isolated elements of the prior art cannot be plucked from the references without considering them in their entirety.

CONCLUSION

[0019] As a result of the presented amendments and remarks, Applicants assert that the remaining Claims are patentable and in condition for prompt allowance. Should the Examiner require additional information, Applicants respectfully request that the Examiner notify them of any such need. If any impediments to the prompt allowance of the claims can be resolved by a telephone conversation, the Examiner is respectfully requested to contract the undersigned.

Respectfully submitted,

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